



THE IMPACT OF ARTIFICIAL INTELLIGENCE IN EDUCATION

Pompi Das

Education, Gauhati University, Guwahati (Assam)

ABSTRACT

Artificial Intelligence (AI) is the simulation of human intelligence processes by machines, especially computer systems. Specific applications of Artificial Intelligence include expert systems, natural language processing, speech recognition and machine vision. AI systems offer support for online learning and teaching to be effective. AI helps in personalizing learning for students, automating instructors' routine tasks, powering adaptive assessments. With the increase in studies about AI in the educational field, many scholars believe that the role of teachers, educational institutions and leaders in education will change as AI has a great impact in education. In this regard, the purpose of this study is to examine the impact of AI in education and what kind of implementations it can reveal for future purposes. The research was designed as an analytical study, a qualitative research method, in which data is collected from secondary sources like newspapers, journals, articles and books. The results show that educational institutions and teachers will have new products, benefits and will also face drawbacks with the arrival of AI in education. The findings point out some suggestions for the use of AI and prevention of possible problems. Generally, it seems to have positive perceptions towards AI, however there are also certain drawbacks especially highlighted by teachers and academicians regarding the future of teaching.

KEYWORDS: Artificial Intelligence, Technology, Education, Learners, Teachers.

INTRODUCTION

Arrival of Artificial Intelligence (AI) in education will make the teaching-learning process more effective. AI will help the institution to run the teaching process faster in an interactive way, classes will become faster which will produce the results in a shorter time. Developing AI, will continue to exist the good teacher in future. The classes will be designed to boost the students' affective intelligence.

Ng (2017) claims artificial intelligence to be the new electricity of this age. Artificial Intelligence (AI), generally explained by the public as the ability of machines or computers to think and act as humans do, represents the efforts towards computerized systems to imitate the human mind and actions (Wartman and Combs, 2018). In this respect, the basic definition of artificial intelligence can be expressed as the skillful imitation of human behavior or mind by tools of programs (Mohammed and Watson, 2019). Artificial Intelligence is a candidate to be presented as the basic building block of the 5th Industrial Revolution by providing itself to be a powerful factor in ensuring economic development with its potential (see, Golic 2019).

Although artificial intelligence studies in education have attracted a lot of attention in recent times, studies about the theory of general artificial intelligence can be traced back to at least the 14th century, and these studies emerged through the work of Alan Turing in 1937 (Humble & Mozelius, 2019).

Artificial Intelligence(AI) in Online Learning

There are a variety of AI systems that are expected to affect instructor- learner interaction in online learning. Goel and Polepeddi (2016) developed an AI teaching assistant named Jill Watson to augment the instructor's communication with students by autonomously responding to student introduction, posing weekly announcements, and answering routine frequently asked question. The recent introduction of commercial AI systems for online learning has demonstrated the complex impact of learner –instructor interaction. For instance, Proctorio (Proctorio Inc., USA), a system that aims to prevent cheating by monitoring students and their computer screens during an exam, seems like a fool-proof plan to monitor students in online learning, but students complain that it increases their test-taking anxiety (McArthur, 2020). The idea of being recorded by Proctorio distracts students and creates an uncomfortable test-taking atmosphere. In similar vein, although Squirrel AI (Squirrel AI Learning Inc., China) aims to provide adaptive learning by adjusting itself automatically to the best method for an individual student, there is a risk that this might restrict students' creative learning (Beard, 2020).

From the above reviews it can be understood that these environment have one thing in common: Unlike educational technologies that merely mediate interactions between instructors and students, AI systems have more autonomy in the way in which it interprets data, infers learning, and at times takes instructional decisions.

Methodology

The present paper is an analytical paper mainly based on the secondary sources

of data. The secondary data includes books, articles, journals and published information related to the topic.

Products and outcomes of Artificial Intelligence in education

The products and outcomes that would stand out or might hold a prominent place in education with artificial intelligence can be listed below-

- Smart classes in schools
- Advanced technology software
- Robot assistants and robot teachers
- Individualized education (pertains to individualization of instruction)
- Simulations for education and lessons
- Scenario and case study –producing systems
- Interest, ability, and needs analysis systems
- Programs or tools for taking attendance
- Vocational guidance system (for career choice)
- Learning outcome detection system (for levels of students)
- Personal teaching tools
- Attention and distraction analysis system
- Academic success detection and suggestion system for improvement
- Learning systems in cloud environments and virtual learning environments
- Curriculum evaluation system
- Systems to store reports and learning processes of students

Benefits of using Artificial Intelligence (AI) in education

Some benefits of using Artificial Intelligence can be listed as follows-

- Helping individual to learn at their own pace
- Helping individual to determine their needs
- Helps to solve problems practically
- No more paperwork in class
- Prevents wastage of time
- Improves quality of education
- Providing ease of work
- Helps to take right decisions with fast analysis
- Helps to plan teaching according to student capacity and speed
- Using or choosing effective learning methods using a learning analysis
- Ability to train in small groups with effective planning
- Helping policymakers in budgeting, expenditure and investments in the right places

Drawbacks of using Artificial Intelligence (AI) in education

Some drawbacks found after analyzing the study are mentioned below-

- Mechanical thinking of individuals suppress intuitive knowledge
- The humanistic value could be replaced by an utilitarian perspective
- The possible bad scenarios with the evaluation of students by categorizing humans based on their IQ level
- The possibility of uncontrolled intelligence technologies in education (e.g. data security)

- Negative effects on social relationships
- Less human intervention in education

SUGGESTIONS

Some suggestions regarding the use of Artificial Intelligence (AI) in education are-

- Applications or systems used in developing AI in education should be tested with pilot applications and has to be integrated into the system according to their results.
- Academic studies should be done on the developed system and must be analyzed.
- Human psychology should not be ignored.
- Necessary infrastructure works should be established.
- Preventive and supportive software should be developed.
- The AI integration should be used in such a way that it does not affect social interactions negatively.

CONCLUSION

The present study revealed the fact that the use of Artificial Intelligence (AI) have a great impact in enhancing the quality of education and makes it effective. Using Artificial Intelligence helps to develop the smart classes in educational institutions. It develops advance technological software, robot assistants. It increases learners' interest, ability, motivation towards learning process. It helps the learner to learn at their own pace. AI helps in constructing tools and programs for taking attendance. There are so many other fields where Artificial Intelligence is used along with education. Engineers, scientists, policymakers, architects, developers in science and technology, and industries use AI to increase the standard of their work within short period of time and decrease the labour work. Along with its positive impacts, it also has some negative impacts like high costs, no creativity, rise in unemployment, make humans lazy, emotionless etc. So, while using Artificial Intelligence in education, the user should keep in mind that excess use of AI can create negative effects in social relationship, the humanistic value could be replaced by an utilitarian perspective, people can become emotionless. And therefore, AI should be used in a field only if there is too much required.

REFERENCES

1. Beard, A(2020), Can Computer ever replace the classroom?.Retrieved January 10, 2021.
2. Chen, Lijia, Chen ,Pingping & Lin, Zhijian(2020), IEEE Access, Artificial Intelligence in Education: A Review.
3. Gocen, Ahmet , Aydemir Faith(2020), Research on Education and Media, Artificial Intelligence in Education and Schools, Vol. 12, N. 1.
4. Goel, A.K, & Polepeddi, L (2016), Jill Watson : A virtual teaching assistant for online education. Georgia Institute of Technology.
5. Golic, Z. (2019) Finance and artificial intelligence: The fifth industrial revolution and its impact on the financial sector. Zbornik radova Ekonomskog fakulteta u Istocnom Saeajevu, (19), pp.67-81. Artificial intelligence is the new electricity
6. Humble, N.,& Mozeliuss, P.(2019, October). Artificial Intelligence in Education-a Promise, a Threat or a Hype?. In European Conference on the Impact of Artificial Intelligence and Robotics 2019(ECIAIR 2019), Oxford, UK(pp.149-156).Academic Conferences and Publishing International Limited.
7. Mohammed P.S., & Watson E.N.(2019). Towards inclusive education in the age of artificial intelligence: perspectives, challenges and opportunities. In: Knox J., Wang Y., Gallagher M. (eds) Artificial Intelligence and Inclusive Education. Perspective on Rethinking and Reforming Education. Singapore: Springer.
8. Ng, A(2017, January 25). Artificial intelligence is the new electricity. Speech presented at Stanford MSx Future Forum in California, Stanford.
9. Wartman, S.A., & Combs , C. D.(2018). Medical education must move from the information age to the age of artificial intelligence . Academic Medicine ,93(8),pp.1107-1109.